

Page 4
Serial No. 10/706,536
Response to Official Action

In the Drawings

There are no amendments to the drawings.

Remarks

The Examiner has rejected claims 10-13, 16-18, 21-23 and 28 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 3,157,853 to Hirsch ("the '853 patent"). The Examiner has further rejected claims 14-15, 19-20, 24-27 and 29 under 35 U.S.C. §103(a) as being unpatentable over the '853 patent. The Examiner has still further rejected claims 1-9 under 35 U.S.C. §103(a) as being unpatentable over the '853 patent in view of U.S. Patent 4,713,651 to Morag ("the '651 patent"). These rejections are respectfully traversed.

35 U.S.C. §102(b) Rejections

Claims 10-13 and 21 require at least the following limitation, the control signal controlling said plurality of vibratory units based on a determined direction and distance of the identified threat relative to the object. Similarly, Claims 16-18 require outputting the control signal to the selected vibratory unit to indicate to the user the distance and direction of the identified threat relative to the position of the object. Claims 22, 23 and 28 require mapping the threat position information to said plurality of vibratory elements such that a distance and direction of a threat relative to an object is mapped to one or more of said plurality of vibratory elements and energizing said plurality of vibratory elements to provide a threat detection signal that indicates to the person the distance and direction of the threat relative to the person.

The Examiner has submitted that the '853 patent discloses all of such limitations of Claims 10-13, 16-18, 21-23 and 28. The Applicant respectfully disagrees.

The '853 patent teaches a tactile communication system employing a plurality of sensing devices, namely six accelerometers, to communicate changes in attitude and in all rectilinear movements of an aircraft (FIG. 1, col. 2, lines 55-73). In one embodiment, the system communicates the changes to a ground operator to provide an indication of the aircraft's accelerations. (col. 3, lines 1-3). The ground operator may then transmit by separate communication means information to the aircraft necessary for the guidance of the aircraft through a desired course. (col. 2, 68-72).

In a further embodiment, the sensing devices may transmit an activating signal to radar equipment and communicate to a crewman the changing distance and the direction of change between the aircraft and another object. (col. 4, lines 31-39). The radar equipment or receiver of the '853 patent searches areas to either side of the aircraft and forwardly and warns the pilot when a distance vector is decreasing at a rate that a collision is likely. (col. 11, lines 3-26).

However, nowhere does the '853 patent disclose or suggest a system in which a control signal controlling a plurality of vibratory units is based on a determined direction and distance of the identified threat relative to the object. To the contrary, the '853 patent discloses a system of communicating accelerations. In fact, the '853 patent clearly points out that the sensing devices or accelerometers are so arranged that when the aircraft is moving at a uniform rate with no acceleration, the output signal is zero (col. 6,

lines 22-25). Therefore, when the aircraft is in straight and level flight or maintaining a fixed distance from identified threat, no tactile data is available to the user.

Thus, while the disclosed system may detect changes in the aircraft's attitude or the changing distance between the aircraft and another object, it does not detect a direction and/or distance of a identified threat and generate a control signal based on the determined direction and distance of the identified threat relative to the object as required by the Claims 10-13, 16-18, 21-23, and 28.

It is well settled that "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Therefore, Claims 10-13, 16-18, 21-23 and 28 of the pending application cannot be anticipated by the '853 patent.

35 U.S.C. §103(a) Rejections

Claims 14-15, 19-20 and 24-26 also require the above-discussed limitations which are lacking from the disclosure of the '853 patent, including a control signal based upon a determined direction and distance of a identified threat relative to the object. Further, as the Examiner points out, the '853 patent fails to disclose vibratory units located in a seating device utilized by the user or in a harness worn by the user as required by Claims 14 and 15, respectively. Further, the '853 patent does not disclose the vibratory units located in a harness worn by the user or an article of clothing worn by the user as required by Claims 19 and 20, respectively, or a flexible material positioned

against the user's back, a garment, or a vest surrounding the user's torso as required by Claims 24, 25 and 26. Still further, the '853 patent fails to disclose the one or more vibratory elements positioned in or near an axis extending from said body of the user to the threat as required by Claim 27.

The Examiner submits that it would've been obvious to one having ordinary skill in the art that the vibrator units can be located in any appropriate location that provides convenience and optimize to the user. The Applicant respectfully disagrees.

The '853 patent discloses vibrators 26 and 27 adapted to be operatively associated with the finger of the operator's hand or some other appropriate part of the body. (col. 7, lines 21-24). The '853 patent further discloses an oscillatory receiver 117 strapped to some portion of the pilot's body such as his forearm. (col. 11, lines 42-47). However, nowhere does the '853 patent suggest the desirability of modifying the invention to locate a vibratory unit in a harness, a seating device, a flexible material positioned against the user's back, a vest surrounding the user's torso, or positioned in or near an axis extending from said body of the user to the threat. Such configurations provide advantages not realized by the prior art at least in that they allow for the threat to be indicated by selected tactile sensation generators positioned on the side of body facing towards the identified threat rather than in an isolated location such as the operator's finger or forearm. (Specification, Para. 40).

"To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention."

tion or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). The Applicant respectfully submits that the Examiner has failed to supply a convincing line of reasoning to indicate why one would have found each the limitations of Claims 14-15, 19-20 and 24-27 based solely on the '853 patent's suggestion that vibrators may be located on "some other appropriate part of his body."

The Examiner also failed to provide a convincing line of reasoning to find Claim 29 unpatentable over the '853 patent. Claim 29 requires a means for energizing the plurality of vibratory elements in pulses of variable duration with the duration of the pulse depending on the distance from the threat to the object. The '853 discloses only a system of communicating changes in attitude and in all rectilinear movements of an aircraft. The frequency of the output signal may be increased in an emergency situation when a collision course is indicated by the acceleration data. However, nowhere is it disclosed vibratory elements energized in pulses of variable duration with the duration of the pulse depending on the distance from the threat to the object. At least for the above stated reasons, Claims 14-15, 19-20, 24-27 and 29 should be allowed.

Claims 1-9 require a control signal based upon a determined direction and distance of the identified threat relative to the vehicle. Claim 3 further requires the control signal modulating a selected vibratory unit based on the distance of the identified threat relative to the vehicle. Claim 4 further requires the control signal selectively modulating

multiple vibratory units based upon the direction and distance respectively, of multiple identified threats relative to the vehicle. Applicant respectfully submits that at least these limitations are not taught by the '853 patent. The Applicant further submits that the '651 patent also fails to teach or suggest the missing claim limitations.

The '651 patent discloses an information display system for displaying external information spatially related to the operator's position. (col. 1, lines 41-49). While the system provides an operator with spatial or directional information via a helmet, the '651 patent fails to disclose a control signal based upon a determined direction and distance of an identified threat relative to the object. (col. 1, lines 50-54).

Applicant further respectfully submits that there is absolutely no suggestion in either the '853 patent or the '651 patent to further modify this combination to provide tactile indication of the distance of a threat to the vehicle as required by the pending claims. It is well settled that the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). Further, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Accordingly, Applicant respectfully submits that because neither the '853 patent nor the '651 patent teach, disclose or suggest controlling a plurality of vibratory units or

tactile sensation generators based upon a determined direction and distance of the identified threat relative to the vehicle as required by the pending claims, no combination of these references can render the pending claims obvious. Applicant further respectfully submits that there is no suggestion in either reference for further modification of the combination to arrive at the pending claims other than by review of the present application.

It is respectfully submitted that claims 1 – 29, all of the claims remaining in the application, are in order for allowance and early notice to that effect is respectfully requested.

Respectfully submitted,



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